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PATENT  
454313-3154.2

The dose volumes may be preferably between 0.2 and 5 ml, preferably between 1 and 3 ml.

The improved DNA vaccines according to the invention may be administered, in the context of this vaccination method, by various routes of administration proposed in the prior art for polynucleotide vaccination and by means of known techniques of administration.

According to a preferred mode of the invention, the methods of vaccination comprise the administration of the improved DNA vaccines according to the invention by the intramuscular route, the subcutaneous route or with the aid of an injector without needle by the intradermal route.

The invention will now be described in greater detail with the aid of embodiments taken as nonlimiting examples and referring to the drawings, in which:

Figure No. 1: plasmid pVR1012

Figure No. 2: plasmid pAB110

**Sequence listing:**

20 SEQ ID NO 1: oligonucleotide PB326  
SEQ ID NO 2: oligonucleotide PB329  
SEQ ID NO 3: oligonucleotide SB090  
SEQ ID NO 4: oligonucleotide SB091  
SEQ ID NO 5: oligonucleotide LF001  
25 SEQ ID NO 6: oligonucleotide LF002  
SEQ ID NO 7: oligonucleotide PB234  
SEQ ID NO 8: oligonucleotide PB235  
SEQ ID NO 9: oligonucleotide PB511  
SEQ ID NO 10: oligonucleotide PB512  
30 SEQ ID NO 11: oligonucleotide SB221  
SEQ ID NO 12: oligonucleotide SB222  
SEQ ID NO 13: oligonucleotide PB507